

METHOD OF FORMING A SEMICONDUCTOR DEVICE HAVING AN ENERGY ABSORBING LAYER AND STRUCTURE THEREOF

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Abstract of the Disclosure

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Predetermined regions of a transistor are activated using a buried energy absorbing layer. The buried energy absorbing layer is under a semiconductor layer, in which a transistor is being formed. Amorphous regions are formed within the semiconductor layer on either side of a control electrode and a gate dielectric. An energy source with a wavelength that is not absorbed by the amorphous regions or the control electrode is applied to the transistor and absorbed by the energy absorbing layer. The energy absorbing layer transfers the energy into heat, which is at a temperature greater than or equal to the melting temperature of the amorphous regions and less than the melting temperature of the semiconductor layer. Due to the heat, the amorphous regions melt and recrystallize, thereby becoming electrically active. However, the control electrode does not melt.